

LISTINGS OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A metal powder production process using a metal compound powder as a raw material and reducing said metal compound powder, said process comprising:

a mixing step in which the metal compound powder, selected from niobium compound and tantalum compound, is mixed with a binder, and at least one compound selected from the group consisting of oxides of magnesium, sodium, barium and potassium; halides of calcium, magnesium, sodium, barium and potassium and carbonates of magnesium, sodium, barium and potassium;

a molding step in which a mixed powder obtained from the mixing step is molded to a metal compound feed compact;

a sintering step in which the metal compound is sintered;

a reducing step in which a metal is formed by reducing the metal compound feed compact

by contacting the metal compound feed compact with at least one active metal selected from calcium, magnesium, sodium, barium and potassium, and

a separation step in which the metal formed in the reducing step is separated from a surplus of active metal, by-products and a surplus of the compound included in the metal compound feed compact, wherein

in the reducing step the active metal is arranged at a distance from the metal compound feed compact and vaporized by heating so that the vaporized active metal is supplied to the metal compound feed compact;

in the reducing step, a plurality of metal compound feed compacts are arranged in a sealed reaction device in such a manner as to diffuse the vaporized active metal among the metal compound feed compacts so that the plurality of metal compound feed compacts simultaneously come into contact with the vaporized active metal, and do not contact the inner wall of the reaction device due to being supported with a supporting device;

the shape of the metal compound feed compacts before and after the reducing step is substantially the same; and

the mixing ratio of the compound is that cations in the compound are blended at 0.5 to 1 mole with respect to 1 mole of the metal contained in the metal compound feed compact.

2. – 7. (Canceled)

8. (Previously Presented) A metal powder production process according to claim 1 wherein one selected from a niobium oxide and niobium halide is used as the niobium compound.

9. (Previously Presented) A metal powder production process according to claim 1 wherein the temperature of the metal compound feed compact in the reducing step is 800 to 1000°C.

10. (Previously Presented) A metal powder production process according to claim 1 wherein in the molding step, the metal compound feed compact is molded into shape in which the distance from an arbitrary location within the metal compound feed compact to the surface of the compact is 2 to 5 mm.

11. (Original) A metal powder production process according to claim 1 wherein a step is additionally contained in which the metal formed in the reducing step is separated from the active metal and by-products by acid treatment.

12. (Withdrawn) A metal compound feed compact comprised by mixing a metal compound and a binder, molding, and firing; wherein
the distance from an arbitrary location within the compact to the surface of the compact is not longer than 10 mm.

13. (Withdrawn) A metal compound feed compact according to claim 12 wherein the metal

compound contains a compound raw material of a metal element selected from niobium, zirconium, titanium, hafnium, tantalum, rare earth metal and actinide metal.

14. (Withdrawn) A metal compound feed compact according to claim 12 wherein the metal compound feed compact contains at least one compound of a metal selected from calcium, magnesium, sodium, barium and potassium as the reaction agent.

15. (Withdrawn) A metal compound feed compact according to claim 14 wherein the reaction agent is one selected from an oxide, halide, and carbonate of at least one metal selected from calcium, magnesium, sodium, barium and potassium.

16.-17. (Cancelled)

18. (Previously Presented) The metal powder production process according to claim 1, wherein:

the metal compound feed compact has the shape of a wire, in which the distance between the outer periphery and the center in a cross-section that is perpendicular to the center line in the direction of length is not longer than 10 mm.

19. (Previously Presented) The metal powder production process according to claim 1, wherein:

the mixing ratio of metal compound in the metal compound feed compact is not less than 10% by weight.

20. (Previously Presented) The metal powder production process according to claim 1, wherein:

the content of the active metal is at 50 to 400 parts by weight with respect to 100 parts by weight of the metal compound feed compact.

21. (New) A metal powder production process using a metal compound powder as a raw material and reducing said metal compound powder, said process comprising:

a mixing step in which the metal compound powder, selected from niobium compound and tantalum compound, is mixed with a binder, and at least one compound, excluding

bentonites, selected from the group consisting of oxides of magnesium, sodium, barium and potassium; halides of calcium, magnesium, sodium, barium and potassium and carbonates of magnesium, barium and potassium;

a molding step in which a mixed powder obtained from the mixing step is molded to a metal compound feed compact;

a sintering step in which the metal compound is sintered;

a reducing step in which a metal is formed by reducing the metal compound feed compact

by contacting the metal compound feed compact with at least one active metal selected from calcium, magnesium, sodium, barium and potassium, and

a separation step in which the metal formed in the reducing step is separated from a surplus of active metal, by-products and a surplus of the compound included in the metal compound feed compact, wherein

in the reducing step the active metal is arranged at a distance from the metal compound feed compact and vaporized by heating so that the vaporized active metal is supplied to the metal compound feed compact;

in the reducing step, a plurality of metal compound feed compacts are arranged in a sealed reaction device in such a manner as to diffuse the vaporized active metal among the metal compound feed compacts so that the plurality of metal compound feed compacts simultaneously come into contact with the vaporized active metal, and do not contact the inner wall of the reaction device due to being supported with a supporting device;

the shape of the metal compound feed compacts before and after the reducing step is substantially the same; and

the mixing ratio of the compound is that cations in the compound are blended at 0.5 to 1 mole with respect to 1 mole of the metal contained in the metal compound feed compact.